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UNITED STATES
DEPARTMENT
OF AGRICULTURE
Radio Service
OFFICE OF
INFORMATION

Tuesday, June 14, 1938

HOMEMAKERS' CHAT

(FOR BROADCAST USE ONLY)

Subject: "QUESTIONS AND ANSWERS." Information from the Office of Experiment Stations, United States Department of Agriculture.

--ooOoo--

Vitamin questions come to the fore in this week's mailbag. As a matter of fact, vitamin questions are numerous every week. Housewives naturally want to know how to choose and prepare food to make the most of the vitamins. Right now with garden vegetables and fruits ready, and canning season underway, a good many listeners are asking about canning or cooking to save vitamins.

One listener this week inquires: "Does canning destroy any of the vitamins in fruits and vegetables?"

Answer: In general, heat alone, in cooking and canning does not injure any of the vitamins. But what the chemists call "oxidation--" that is, the action of the oxygen in the air on the food may destroy both B and C. And *heat hastens oxidation*. Vitamins A, D, E, and G suffer little or none in canning. But the loss of *C* in canning is often very important because fruits and vegetables are the chief source of C, and because *everyone* must have a supply of it *every* day since the body is unable to store it.

Oxidation and heat together then are *destroyers* of this vitamin while *acid* and *cold* are its *protectors*. So food canned by the open-kettle method where it is exposed to both heat and air loses more of its vitamin C than food canned in vacuum or in the presence of very little air. And fruit and vegetables that wait for hours in a warm kitchen before cooking or canning lose much more of their vitamin C than those that are freshly picked or kept chilled in a refrigerator. Modern methods of removing air from food and packaging in sealed containers such as the food preservation industries now use are aids in saving vitamins from oxidation.

The chemists say that acid makes vitamin C more "stable." So canned *fruits* hold their vitamin C very well because they are *acid*, but *vegetables* lose much of their original C. Tomatoes are a good example of this. Tomatoes luckily are not only rich in C but they are acid. So in canning they lose little of their naturally rich vitamin supply. On the other hand, cabbage and peas and green beans--also good sources of C when *fresh*--lose much of it during canning. Investigators at the Massachusetts Experiment Station found that canning destroyed from 50 to 85 percent of the C in peas, lima beans, spinach and green asparagus. But they found that practically all canned *tomatoes* may be counted on for their C, though different brands differ in the amount they contain just as different varieties do.

Even acid can't have C in foods that are exposed to the air for long especially if they stand in a warm place. Orange juice squeezed in the evening and set aside for breakfast will lose much of its C by morning. Jars of tomatoes after they are opened also lose C as the air acts on the tomatoes. Raw cabbage shredded and allowed to stand loses a great deal of C as do shredded raw carrots. Apple cider soon begins to lose C after pressing if allowed to stand open. And if you buy lima beans or peas already shelled, you won't be getting nearly as much vitamin for your money as if you had bought them in the pod and shelled them just before cooking. But temperature has an effect here too. Orange juice kept in the refrigerator doesn't lose C as fast as if it stand out in the warm kitchen. This is true also of other foods.

As I said, many of these facts are also true of B--the anti-neuritic B in fruits or vegetables is at least partly destroyed by drying, cooking and canning. But it is destroyed less in fruits than in vegetables for the acids help stabilize it. They also are the reason that fruit may be sterilized with less heat and for a shorter time than must be used with non-acid vegetables.

Now to answer the listeners who have asked about cooking to save vitamins. Again, it pays to have your vegetables as fresh as possible or to keep them cold if they must wait. Then, quick cooking with the least possible exposure to air is the way to save the most of vitamins A and B and C. You may be interested to know that several investigators report more loss of vitamins in ordinary home cooking than in canning. This is probably because so many people cook vegetables too long.

Another question: "What effect has pickling on vitamin C?"

Well, a Japanese scientist found that fresh cucumbers contained considerable vitamin C but salt pickles made from them contained none. Other scientists have found fresh cabbage a very rich source but sauerkraut only a fair source of C. Still others report that pumpkin loses half its C after pickling. On the whole the scientists agree that fermentation or pickling of fruits and vegetables injures vitamin C. Pickles are valuable chiefly for their taste. They often help relieve the monotony of winter meals. But don't count on them for much vitamin value. They belong to the class of food luxuries rather than food essentials.

Another listener asks what vitamins are lost in the water vegetables are cooked in.

The Massachusetts Station says: "Large quantities of the water-soluble vitamins B and C and G are dissolved in the cooking water of fruits and vegetables and lost unless this water is used."

Last question: Which is hardest on the vitamins in fruits--drying in the sun or drying with artificial heat?

Answer: Sun-drying seems to be more destructive to vitamins A and C than artificial dehydration, probably because it is slower and allows for more oxidation.

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